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| APPLICATION NO.                                                             | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/828,715                                                                  | 04/06/2001  | Christine W. Jarvis  | CXU-350             | 5602             |
| 22827                                                                       | 7590        | 02/08/2005           | EXAMINER            |                  |
| DORITY & MANNING, P.A.<br>POST OFFICE BOX 1449<br>GREENVILLE, SC 29602-1449 |             |                      | RHEE, JANE J        |                  |
|                                                                             |             |                      | ART UNIT            | PAPER NUMBER     |

1772

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                      |  |
|------------------------------|--------------------------------------|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/828,715 | <b>Applicant(s)</b><br>JARVIS ET AL. |  |
|                              | <b>Examiner</b><br>Jane Rhee         | <b>Art Unit</b><br>1772              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 41-74 and 77-99 is/are pending in the application.
- 4a) Of the above claim(s)        is/are withdrawn from consideration.
- 5) ☐ Claim(s)        is/are allowed.
- 6) ☒ Claim(s) 41-74 and 77-99 is/are rejected.
- 7) ☐ Claim(s)        is/are objected to.
- 8) ☐ Claim(s)        are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on        is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No.       .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                |                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. <u>      </u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                           | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                     |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>      </u> | 6) <input type="checkbox"/> Other: <u>      </u>                                                |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on 11/22/2004 has been entered.

### ***New Rejections***

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 41-42,44,46-47,50-51,53,57 are rejected under 35 U.S.C. 102(b) as being anticipated by Gaylord Jr. (3970079).

As to claims 41,50-51,57, Gaylord Jr. discloses a first substrate having an upper and a lower surface (figure 12 number 55) and a second substrate having an upper and lower surface (figure 12 number 52), positioning a continuous thermoplastic tape folded into a z-shaped configuration bonded adjacent to the first substrate and the second substrate (figure 12 number 66) such that the tape is in operative communication with the upper and lower surfaces of the first

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substrate and with the upper and lower surfaces of the second substrate (figure 12 number 66), and forming a seam by bonding the tape to the upper and lower surfaces of the first substrate and to the upper and lower surfaces of the second substrate (figure 12 numbers 55,52), wherein the bonding between the tape and the upper and lower surfaces of the first and second substrates includes physical bonding and optionally adhesive bonding (col. 4 lines 39-41). As to claim 42, Gaylord Jr. discloses that the method further comprises heating the first and second tape portion to a predetermined temperature (col. 4 lines 25-28). As to claim 44, Gaylord Jr. discloses that the first and second portion of the tape is subjected to pressure (col. 4 line 39). As to claim 46, Gaylord Jr. discloses that the first tape portion to simultaneous heat and pressure and subjecting the second tape portion to simultaneous heat and pressure (col. 4 lines 39-41). As to claims 47,64, Gaylord Jr. discloses that the first substrate and second substrate are fabrics (col.3 line 48). As to claim 53, Gaylord Jr. discloses that the tape portions are folded after being placed adjacent to first substrate and the second substrate (col. 4 lines 19-31).

3. Claims 63-64,70-71 are rejected under 35 U.S.C. 102(b) as being anticipated by Gaylord Jr. (3970079).

As to claims 63, and 70-71, Gaylord Jr. discloses a first substrate having an upper and a lower surface (figure 12 number 55) and a second substrate having an upper and lower surface (figure 12 number 52), positioning a continuous thermoplastic tape folded into a z-shaped configuration bonded adjacent to the first substrate and the second substrate (figure 12 number 66) such that the tape

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is in operative communication with the upper and lower surfaces of the first substrate and with the upper and lower surfaces of the second substrate (figure 12 number 66), and forming a seam by bonding the tape to the upper and lower surfaces of the first substrate and to the upper and lower surfaces of the second substrate (figure 12 numbers 55,52), wherein the bonding between the tape and the upper and lower surfaces of the first and second substrates includes physical bonding and optionally adhesive bonding (col. 4 lines 39-41). As to claims 64, Gaylord Jr. discloses that the first substrate and second substrate are fabrics (col.3 line 48). Gaylord Jr. discloses that the bonding between the tape and the upper and lower surfaces of the first and second substrates includes adhesive bonding (col.4 lines 19-31).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 4. Claims 43,48-49,56,58-61, 77,79-81,83,86,88-93,96,98-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord Jr. in view of Obayashi et al. (4410575), Efunda, Encyclopedia of Petroleum, and Lumicor.

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Gaylord Jr. discloses the method of forming a seam between two substrates described above. Gaylord Jr. fails to disclose that the first and second predetermined temperature is between about 10(C below the thermal melting temperature of the thermoplastic material to about 50(C above the thermal melting temperature of the thermoplastic material. Gaylord Jr. fails to disclose multiple layers in the tape portion and that the layers contain thermoplastic material having a first thermal melting temperature and another one of the layers contain a thermoplastic material having a second thermal melting temperature, the second thermal melting temperature being greater then the first thermal melting temperature. Gaylord Jr. fails to disclose that at least one of the tape portions comprises polyurethane.

As to claims 43,48-49,59-61, 77,79-81,83,88-90, Obayashi et al. discloses that the first and second predetermined temperature is between about 10C below the thermal melting temperature of the thermoplastic material to about 50C above the thermal melting temperature of the thermoplastic material (col. 4 lines 25-31, polyurethane has a melting temperature of 75-137 degrees Celsius taught by the Efunda reference), wherein the tape portion comprises multiple layers (col. 5 lines 36-38) and that the layers contain thermoplastic material having a first thermal melting temperature (col. 5 lines 49-50 the adhesive, acrylic resin is a thermoplastic resin taught by the Encyclopedia of Petroleum product) and another one of the layers contain a thermoplastic material having a second thermal melting temperature (col. 3 lines 55-59), the second thermal melting temperature being greater then the first thermal melting temperature (col. 3 lines

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57-58 Lumicor teaches that the acrylic resin has a melting temperature of 148 degrees celsius), for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38). As to claims 56,58,67,72,86,96, Obayashi et al. discloses that at least one of the tape portions comprises polyurethane (col. 8 line 25) for the purpose of providing a synthetic polymer material capable thermally melting at a temperature of 100-350 degrees Celsius to bond the fabric substrates together (col. 3 lines 55-58 and col. 4 lines 25-31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide Gaylord Jr. with the first and second predetermined temperature is between about 10(C below the thermal melting temperature of the thermoplastic material to about 50(C above the thermal melting temperature of the thermoplastic material wherein the tape portion comprises multiple layers and that the layers contain thermoplastic material having a first thermal melting temperature and another one of the layers contain a thermoplastic material having a second thermal melting temperature, the second thermal melting temperature being greater then the first thermal melting temperature in order to melt the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38) as taught by Obayashi et al.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide that at least one of the tape portions comprises polyurethane in order to provide a synthetic polymer material

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capable thermally melting at a temperature of 100-350 degrees Celsius to bond the fabric substrates together (col. 3 lines 55-58 and col. 4 lines 25-31) as taught by Obayashi et al.

5. Claims 67-69,72-74,91-93,96,98-99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord Jr. in view of Obayashi et al. (4410575), Efunda, Encyclopedia of Petroleum, and Lumicor.

Gaylord Jr. discloses the method of forming a seam between two substrates described above. Gaylord Jr. fails to disclose that the first and second predetermined temperature is between about 10(C below the thermal melting temperature of the thermoplastic material to about 50(C above the thermal melting temperature of the thermoplastic material. Gaylord Jr. fails to disclose multiple layers in the tape portion and that the layers contain thermoplastic material having a first thermal melting temperature and another one of the layers contain a thermoplastic material having a second thermal melting temperature, the second thermal melting temperature being greater than the first thermal melting temperature. Gaylord Jr. fails to disclose that at least one of the tape portions comprises polyurethane.

As to claims,68-69, 91-93,and 98-99, Obayashi et al. discloses that the first and second predetermined temperature is between about 10C below the thermal melting temperature of the thermoplastic material to about 50C above the thermal melting temperature of the thermoplastic material (col. 4 lines 25-31, polyurethane has a melting temperature of 75-137 degrees Celsius taught by the Efunda reference), wherein the tape portion comprises multiple layers (col. 5



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lines 36-38) and that the layers contain thermoplastic material having a first thermal melting temperature (col. 5 lines 49-50 the adhesive, acrylic resin is a thermoplastic resin taught by the Encyclopedia of Petroleum product) and another one of the layers contain a thermoplastic material having a second thermal melting temperature (col. 3 lines 55-59), the second thermal melting temperature being greater than the first thermal melting temperature (col. 3 lines 57-58 Lumicor teaches that the acrylic resin has a melting temperature of 148 degrees celsius), for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38).

As to claims 67, 96, Obayashi et al. discloses that at least one of the tape portions comprises polyurethane (col. 8 line 25) for the purpose of providing a synthetic polymer material capable thermally melting at a temperature of 100-350 degrees Celsius to bond the fabric substrates together (col. 3 lines 55-58 and col. 4 lines 25-31).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide Gaylord Jr. with the first and second predetermined temperature is between about 10°C below the thermal melting temperature of the thermoplastic material to about 50°C above the thermal melting temperature of the thermoplastic material wherein the tape portion comprises multiple layers and that the layers contain thermoplastic material having a first thermal melting temperature and another one of the layers contain a thermoplastic material having a second thermal melting temperature, the second thermal melting temperature being greater than the first thermal

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melting temperature in order to melt the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38) as taught by Obayashi et al.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide that at least one of the tape portions comprises polyurethane in order to provide a synthetic polymer material capable thermally melting at a temperature of 100-350 degrees Celsius to bond the fabric substrates together (col. 3 lines 55-58 and col. 4 lines 25-31) as taught by Obayashi et al.

6. Claims 45,55,62,78,85, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord Jr. in view of Benstock et al. (5003902).

Gaylord Jr. discloses the method of forming a seam between two substrates described above. Gaylord Jr. fails to disclose that the pressure is between about 40 pounds per square inch to about 120 pounds per square inch. Gaylord Jr. fails to disclose that the edge of at least one of the substrate is non linear. As to claims 45,62,78 Benstock et al. teaches that the pressure is 40 pounds per square inch (col. 5 line 2) for the purpose of providing optimum heating and fusing characteristics (col. 5 line 1). As to claims 55, 85, Benstock et al. discloses that the edge of at least one of the substrate is non linear (figure 1A number 10) for the purpose creating a liquid tight barrier (col. 3 lines 13-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide Gaylord Jr. with the pressure of

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40 pounds per square inch in order to provide optimum heating and fusing characteristics (col. 5 line 1) as taught by Benstock et al.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide Gaylord Jr. with the edge of at least one of the substrate being non linear (col. 7 line 39) in order to create a liquid tight barrier (col. 3 lines 13-14) as taught by Benstock et al.

7. Claims 65,95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord Jr. in view of Benstock et al. (5003902).

Gaylord Jr. discloses the method of forming a seam between two substrates described above. Gaylord Jr. fails to disclose that the pressure is between about 40 pounds per square inch to about 120 pounds per square inch. Gaylord Jr. fails to disclose that the edge of at least one of the substrate is non linear. As to claims 65, and 95, Benstock et al. discloses that the edge of at least one of the substrate is non linear (figure 1A number 10) for the purpose creating a liquid tight barrier (col. 3 lines 13-14).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide Gaylord Jr. with the edge of at least one of the substrate being non linear (col. 7 line 39) in order to create a liquid tight barrier (col. 3 lines 13-14) as taught by Benstock et al.

8. Claim 52,82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord Jr. in view of Arakawa et al. (5591521).

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Gaylord Jr. discloses the method of forming a seam between two substrates described above. Gaylord Jr. fail to disclose that the tape portions are folded prior to being placed adjacent to the first substrate and the second substrate. As to claims 52,82, Arakawa et al. teaches that the tape portions are folded prior to being placed adjacent to the first substrate and the second substrate for the purpose of having a portion of the tape being easily released to latch on to the second substrate (col. 5 line 55).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide Gaylord Jr. with the tape portions that are folded prior to being placed adjacent to the first substrate and the second substrate in order to have a portion of the tape being easily released to latch on to the second substrate (col. 5 line 55) as taught by Arakawa et al.

9. Claims 54, 84, are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord Jr. in view of Wilhoit et al. (6096420).

Gaylord Jr. discloses the method of forming a seam between two substrates described above. Gaylord Jr. fail to disclose that the method further comprises etching at least one of the surfaces of the first substrate or the second substrate. As to claims 54, 84, Wilhoit et al. teaches etching (col. 2 lines 64-65) on the surfaces of plastic films for the purpose of enhancing the affinity of the film surface to the pressure sensitive adhesive (col. 2 lines 58-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide Gaylord Jr. with etching on the

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surfaces of plastic films in order to enhance the affinity of the film surface to the pressure sensitive adhesive (col. 2 lines 58-60) as taught by Wilhoit et al.

10. Claims 66,94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord Jr. in view of Wilhoit et al. (6096420).

Gaylord Jr. discloses the method of forming a seam between two substrates described above. Gaylord Jr. fail to disclose that the method further comprises etching at least one of the surfaces of the first substrate or the second substrate. As to claims 66,94, Wilhoit et al. teaches etching (col. 2 lines 64-65) on the surfaces of plastic films for the purpose of enhancing the affinity of the film surface to the pressure sensitive adhesive (col. 2 lines 58-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide Gaylord Jr. with etching on the surfaces of plastic films in order to enhance the affinity of the film surface to the pressure sensitive adhesive (col. 2 lines 58-60) as taught by Wilhoit et al.

11. Claims 87 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord in view of Obayashi et al. (4410575), Efunda, Encyclopedia of Petroleum, and Lumicor and in further view of Yoshii et al. (3887745).

Gaylord and Obayashi et al. in view of Efunda, Encyclopedia of Petroleum and Lumicor discloses the method of forming a seam between two substrates described above. Obayashi et al. discloses wherein the tape portion comprises multiple layers (col. 5 lines 36-38) and that the layers contain thermoplastic material having a first thermal melting temperature (col. 5 lines 49-50 the

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adhesive, acrylic resin is a thermoplastic resin taught by the Encyclopedia of Petroleum product) and another one of the layers contain a thermoplastic material having a second thermal melting temperature (col. 3 lines 55-59), the second thermal melting temperature being greater than the first thermal melting temperature (col. 3 lines 57-58 Lumicor teaches that the acrylic resin has a melting temperature of 148 degrees celsius), for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38). Obayashi et al. discloses that at least one of the tape portions comprises polyurethane (col. 8 line 25) for the purpose of providing a synthetic polymer material capable thermally melting at a temperature of 100-350 degrees Celsius to bond the fabric substrates together (col. 3 lines 55-58 and col. 4 lines 25-31).

Gaylord fail to disclose wherein the tape is a two layer polyurethane tape. However, Obayashi et al. teaches wherein the tape portion comprises multiple layers (col. 5 lines 36-38) and that the layers contain thermoplastic material having a first thermal melting temperature (col. 5 lines 49-50 the adhesive, acrylic resin is a thermoplastic resin taught by the Encyclopedia of Petroleum product) and another one of the layers contain a thermoplastic material having a second thermal melting temperature (col. 3 lines 55-59), the second thermal melting temperature being greater than the first thermal melting temperature (col. 3 lines 57-58 Lumicor teaches that the acrylic resin has a melting temperature of 148 degrees celsius), for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38). Obayashi et al.

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teaches that it is notoriously well known in the art that the tape portion comprises two layers of thermoplastic material for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other. Obayashi et al. teaches that polyurethane is notoriously well known in the art to be a thermoplastic (col. 3 lines 56-60), therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to modify the tape portion with two layers of polyurethane in order to melt the bonding tape to firmly bond the end portions of the fabric together as taught by Obayashi et al.

Furthermore, Yoshii et al. teaches an adhesive tape with two layers of the same thermoplastic material with different melting points (col. 2 lines 43-46) for the purpose of providing an adhesive tape to be tough, transparent, finger tearable, moisture resistant and inexpensive (col. 1 lines 43-45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide an adhesive tape portion with two layers of polyurethane with different melting points in order to provide an adhesive tape to be tough, transparent, finger tearable, moisture resistant and inexpensive (col. 1 lines 43-45) as taught by Yoshii et al.

12. Claim 97 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gaylord in view of Obayashi et al. (4410575), Efunda, Encyclopedia of Petroleum, and Lumicor and in further view of Yoshii et al. (3887745).

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Gaylord and Obayashi et al. in view of Efunda, Encyclopedia of Petroleum and Lumicor discloses the method of forming a seam between two substrates described above. Obayashi et al. discloses wherein the tape portion comprises multiple layers (col. 5 lines 36-38) and that the layers contain thermoplastic material having a first thermal melting temperature (col. 5 lines 49-50 the adhesive, acrylic resin is a thermoplastic resin taught by the Encyclopedia of Petroleum product) and another one of the layers contain a thermoplastic material having a second thermal melting temperature (col. 3 lines 55-59), the second thermal melting temperature being greater than the first thermal melting temperature (col. 3 lines 57-58 Lumicor teaches that the acrylic resin has a melting temperature of 148 degrees celsius), for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38). Obayashi et al. discloses that at least one of the tape portions comprises polyurethane (col. 8 line 25) for the purpose of providing a synthetic polymer material capable thermally melting at a temperature of 100-350 degrees Celsius to bond the fabric substrates together (col. 3 lines 55-58 and col. 4 lines 25-31).

Gaylord fail to disclose wherein the tape is a two layer polyurethane tape. However, Obayashi et al. teaches wherein the tape portion comprises multiple layers (col. 5 lines 36-38) and that the layers contain thermoplastic material having a first thermal melting temperature (col. 5 lines 49-50 the adhesive, acrylic resin is a thermoplastic resin taught by the Encyclopedia of Petroleum product) and another one of the layers contain a thermoplastic material having a second



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thermal melting temperature (col. 3 lines 55-59), the second thermal melting temperature being greater than the first thermal melting temperature (col. 3 lines 57-58 Lumicor teaches that the acrylic resin has a melting temperature of 148 degrees celsius), for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38). Obayashi et al. teaches that it is notoriously well known in the art that the tape portion comprises two layers of thermoplastic material for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other. Obayashi et al. teaches that polyurethane is notoriously well known in the art to be a thermoplastic (col. 3 lines 56-60), therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to modify the tape portion with two layers of polyurethane in order to melt the bonding tape to firmly bond the end portions of the fabric together as taught by Obayashi et al.

Furthermore, Yoshii et al. teaches an adhesive tape with two layers of the same thermoplastic material with different melting points (col. 2 lines 43-46) for the purpose of providing an adhesive tape to be tough, transparent, finger tearable, moisture resistant and inexpensive (col. 1 lines 43-45).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide an adhesive tape portion with two layers of polyurethane with different melting points in order to provide an adhesive tape to be tough, transparent, finger tearable, moisture resistant and inexpensive (col. 1 lines 43-45) as taught by Yoshii et al.

***Response to Arguments***

13. Applicant's arguments filed 7/19/2004 have been fully considered but they are not persuasive.

In response to applicant's argument that Gaylord fail to disclose that at least a portion of the continuous tape to include first thermoplastic material having a first melting point an second thermoplastic material having a second melting point, Obayashi et al. teaches wherein the second melting point of the second thermoplastic material is higher than the first melting point of the first thermoplastic material, wherein the tape portion comprises multiple layers (col. 5 lines 36-38) and that the layers contain thermoplastic material having a first thermal melting temperature (col. 5 lines 49-50 the adhesive, acrylic resin is a thermoplastic resin taught by the Encyclopedia of Petroleum product) and another one of the layers contain a thermoplastic material having a second thermal melting temperature (col. 3 lines 55-59), the second thermal melting temperature being greater then the first thermal melting temperature (col. 3 lines 57-58 Lumicor teaches that the acrylic resin has a melting temperature of 148 degrees celsius), for the purpose of melting the bonding tape to firmly bond the end portions of the fabric to each other (col. 4 lines 35-38).

In response to applicant's argument that Gaylord fail to disclose or suggest subjecting the first and second substrates and a continuous tape to predetermined heat and pressure to form a seam joining the first and second substrates and a continuous tape to predetermined heat and pressure to form a

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seam joining the first and second substrates, wherein the predetermined heat is at a temperature at least high enough to cause the second thermoplastic material to flow, Gaylord Jr. discloses that the first tape portion to simultaneous heat and pressure and subjecting the second tape portion to simultaneous heat and pressure (col. 4 lines 39-41).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that the only second material Obayashi et al. discloses is an adhesive coating that may be an acrylic resin, an epoxy resin, or a petroleum resin, is not really part of the bonding tape and actually takes away from the welding effect of the bonding tape, the second material disclosed by Obayashi et al. is part of the bonding tape, since it is an additional layer, and since the applicant claimed that a portion of the bonding tape includes a first and second thermoplastic material and furthermore, the term "portion" is not limited to a single layer but a part of or piece of the tape. As to the adhesive taking away from the welding effect, Obayashi et al. discloses that

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the adhesive *sometimes may* decrease the welding effect of the bonding tape however, does not maintain that it definitely takes away from the welding effect.

In response to applicant's argument that Gaylord Jr. does not disclose the use of a continuous thermoplastic tape that is capable of forming both an adhesive bond and a physical bond with a substrate, similarly Gaylord Jr. does not teach the presence of both adhesive bonding and physical bonding in a seam that joints two substrates using a continuous thermoplastic tape, Gaylord Jr. does disclose the presence of both adhesive bonding and physical bonding in a seam that joins two substrate using a continuous thermoplastic tape (col. 4 lines 39-41). Applicant defines adhesive bonding as bonding that results from attractive forces between two or more materials and physical bonding as physical intermingling of portions of the thermoplastic tape within the interstices of a substrate as a result of portions of the tape becoming relatively melt-flowable upon heating. Gaylord Jr. teaches that the segments are heated and pressed together to fuse the plastic layers together and thereby join the fabric panels (col. 4 lines 21-24). Therefore, the bonding of the plastic layers resulted from attractive forces as defined in adhesive bonding since the two plastic layers are adhered to each other. Furthermore, physical bonding occurred as defined by the applicant, wherein physical intermingling of portions of the thermoplastic tape within the interstices of a substrate as a result of portions of the tape becoming relatively melt-flowable upon heating. Hence Gaylord Jr discloses both adhesive bonding and physical bonding of the two plastic layers.

### ***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jane Rhee whose telephone number is 571-272-1499. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Jane Rhee  
February 2, 2005



HAROLD PYON  
SUPERVISORY PATENT EXAMINER

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